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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,261	09/11/2003	David M. Harris	HARRIS-00201	7784
28960	7590	03/07/2006	EXAMINER	
HAVERSTOCK & OWENS LLP			ROANE, AARON F	
162 NORTH WOLFE ROAD			ART UNIT	
SUNNYVALE, CA 94086			PAPER NUMBER	

3739

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/661,261

Applicant(s)

HARRIS, DAVID M.

Examiner

Aaron Roane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-15, 17-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-15, 17-20 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-15, 17-20 and 22 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Part f of claim 1 recites the step of “calculating a therapeutic ratio for treating the periodontal tissue comprising the pathogen based on a known response of periodontal tissue to the laser output and the ablation threshold of the pathogen within the target.” The examiner has reviewed the present specification and can find no specific reference to “calculating a therapeutic ratio” or the like. The only thing that comes close to this recitation is a passage on page 19, lines 15-17, “Figure 7B shows a block diagram 750 outlining steps for calculating a therapeutic or antiseptic laser dose for eradicating or ablating pathogens in a target, in accordance with the method of the present invention.” Therefore, in order to provide an examination, the examiner interprets “ratio” as —dose— in the claims.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coffelt et al.,

“Determination of energy density threshold for laser ablation of bacteria- An in vitro study”,  
J Clin Periodontology 1997, 24:1-7 in view of Rechmann (USPN 5,795,153).

Regarding claim 13, Coffelt et al. disclose a method of determining a damage threshold for delivering an antiseptic dose to a pathogen in a target, the method comprising: measuring a pulsed laser output from a laser source (see abstract, pages 2-3 and table 1); irradiating the target with the pulsed laser output, wherein the target comprises the pathogen (see entire disclosure); examining the pathogen for ablation (see page 2); adjusting the pulsed laser output energy/power density (see page 2 and table 1); and repeating steps (a) through (d) to determine the ablation threshold of the pathogen within the target (see page 2-6). Coffelt et al. also disclose the method may be used in vivo and in vitro, see page 5, 3<sup>rd</sup> col., line 17. Additionally, Coffelt et al. also disclose the difficulty in using the method for treatment on periodontal pockets since the diameter of delivery tip is usually “greater than the entrance to most periodontal pockets,” see page 6,

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1<sup>st</sup> col. 2<sup>nd</sup> paragraph. Finally, the step of calculating a therapeutic dose for treating the pathogen in an oral cavity comprising the pathogen based on a known response of periodontal tissue to the laser output and the ablation threshold of the pathogen within the target is essentially the main objective of the Coffelt et al. reference, see the reference in its entirety. Rechmann discloses a method (and a device) for removing (i.e., eradicating) bacterial deposits from teeth comprising locating the pathogens within the oral cavity (inherently part of treatment) and radiating periodontal tissue of the oral cavity with a succession of pulses from a pulsed laser having an energy density of  $10 \text{ J/cm}^2$  or greater per pulse, see abstract, col. 2, lines 19-67, col. 5, line 32 through col. 6, line 57 and figures 1 and 2. Additionally, Rechmann teaches the use of a narrow energy delivery tip (distal tip of 28) that is smaller than the opening of the periodontal pocket in order to effectively treat the periodontal pocket, see col. 4-7 and particularly col. 7, lines 20-32. Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to modify the invention of Coffelt et al., as taught by Rechmann, to provide a narrow energy delivery tip that is smaller than the opening of the periodontal pocket in order to effectively treat the periodontal pocket.

Regarding claim 14, Coffelt et al. disclose the claimed invention, see page 2-4 and table 1.

Regarding claim 15, Coffelt et al. disclose the claimed invention, see pages 2-5.

Regarding claims 16 and 17, Coffelt et al. further disclose calculating a therapeutic ratio for treating a periodontal tissue comprising the pathogen and selecting a treatment protocol for treating periodontal tissues that host the pathogen based on the therapeutic ratio, see entire disclosure.

Regarding claim 18, Coffelt et al. further disclose the pulsed laser output corresponds to a wavelength in a range of 580 to 1800 nanometers, see page 5, col. 1.

Regarding claim 19, although Coffelt et al. are silent as to whether or not the laser device used has a fiber optic, the examiner takes official notice of the recited optical fiber (fiber optic) and states that it is extremely well known in the art that fiber optics are used to irradiate a target site with laser output.

Regarding claim 20, Coffelt et al. further disclose examining the pathogen for ablation comprises scanning an exposed region of the target with an optical scanning means, see page 2-5 and figures 1-6.

Regarding claim 22, Coffelt et al. disclose the claimed invention except for wherein the monitoring step the pathogen for ablation comprises measuring sound using an audio detector. However, Rechmann teaches the “applicator can be provided with an acoustic sensor. The acoustic sensor serves for monitoring the progress of the operation since, as long as deposits still exist, the removal will generate a sound due to the ablation pressure.

As soon as no deposits exist anymore, the sound level--which can be acoustically monitored by sensors--will decrease noticeably,” see col. 3, lines 28-35. Therefore at the time of the invention it would have been obvious to one of ordinary skill in the art to modify the invention of Coffelt et al. in view of Rechmann, as further taught by Rechmann, to provide the applicator with an acoustic sensor that “serves for monitoring the progress of the operation since, as long as deposits still exist, the removal will generate a sound due to the ablation pressure.”

### ***Response to Arguments***

Applicant's arguments with respect to claims 13-20 have been considered but are moot in view of the new ground(s) of rejection. Coffelt et al. has been combined with Rechmann in order to meet the presently claimed invention.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Roane whose telephone number is (571) 272-4771. The examiner can normally be reached on Monday-Thursday 7AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.R. *A.R.*  
March 1, 2006

*Roy D. Gibson*  
ROY D. GIBSON  
PRIMARY EXAMINER